UNITED STATES MARINE CORPS
MARINE CORPS AIR STATION
BOX 99100
YUMA, ARIZONA 85369-9100

StaO 11300.2G
3JD3
15 APR

STATION ORDER 11300.2G

From: Commanding Officer
To: Distribution List

Subj: ENERGY MANAGEMENT PROGRAM

Ref: (a) MCO P11000.9C

Encl: (1) Utilities Conservation Plan
(2) Building Energy Monitor Checklist
(3) Energy Conservation Suggestions for Family Housing
(4) Utilities Conservation Violation Report
(5) Energy Discrepancy Report

1. Purpose. To reduce energy consumption in every form and eliminate wasteful energy practices while maintaining the Command's mission.

2. Cancellation. StaO 11300.2F.

3. Background. In October 1992, President Bush signed into law the Energy Policy Act of 1992. A provision of the Act requires the military services to reduce energy consumption per gross square foot 20 percent in Federal buildings by fiscal year 2000, utilizing the FY85 energy baseline. In March 1994, President Clinton signed Executive Order 12902, the Energy Efficiency and Water Conservation at Federal Facilities order. This Executive Order further reduced the energy goal an additional 10 percent by the year 2005. To ensure that this activity meets or exceed the 30 percent reduction by the year 2005, we must plan, organize, train, and invest in our energy conservation program. This strategy will help achieve our current energy reduction requirements, thereby meeting our future energy responsibilities.

4. Action. Develop and implement the following strategies to insure compliance with DOD directives.

a. **Facilities Management Planning**. The reference, "Real Property Manual, Volume VI, Energy and Utilities Management"

requires all Marine Corps installations to develop a five year energy plan, and update that plan. To develop a strategic plan the following requirements should be performed:

(1) Perform Surveys and Audits. This will identify deficiencies in facilities and equipment followed by documenting energy saving potentials. Plans must be comprehensive, addressing not only facility project requirements but also training needs and resource requirements for program management.

(2) Perform Utilities System Assessments (USAs). Normally performed by the Engineering Field Division, this assessment surveys the utilities system or a portion of the system to correct operational deficiencies.

(3) Facilities Maintenance and Assistance Teams (FMAT). Visits are conducted by HQMC on a three to four year cycle. The team evaluates the installations utility and energy system and recommends potential areas for improvement.

(4) Budget Resources. As new programs are identified requirements will be matched with funding resources.

(5) Integrating the Requirements. Once requirements and fund sources are identified, integrate energy conservation requirements into daily operations and long term programs.

(6) Evaluating the Program Plan. This effort identifies areas that need updating and improvement. After the evaluations are completed, incorporate those areas in need of revision into the long range energy plan and update annually.

b. **Departments and Commands, Organization and Training.** Effective program management demands effective organizational structure, active command support, well trained personnel, and the involvement and support of the entire Air Station. It is imperative that all personnel, military and civilian, are aware of the energy reduction challenge and how they must contribute to achieving it.

(1) Utilities Conservation and Appraisal Board (UCAB). The UCAB is responsible for assisting in the planning and implementation of progressive utilities and energy conservation programs at MCAS

Yuma. Members aid in developing the energy management plan and publishing Station instructions. The UCAB is committed to conservation by increasing the "ownership" of the program and by sponsoring the awareness program. UCAB meetings shall meet at least quarterly. UCAB's membership shall be Senior Energy Coordinators from the following organizations:

Facilities Management Officer	Chairman
Station S-4 Officer	Member
MAWTS-1 S-4 Officer	Member
Station Comptroller	Member
Provost Marshal	Member
Director of Engineering	Member
MAG-13 S-4 Officer	Member
1st LAAM Bn S-4 officer	Member
MACS-7 S-4 Officer	Member
MWSS-371 S-4 Officer	Member
VMFT-401 S-4 Officer	Member
H&HS S-4 Officer	Member
MWR	Member
Supply Officer	Member
Energy Manager	Technical Advisor
Station Energy Monitor	Technical Advisor

(2) Energy Awareness Program. This program educates Marines, Sailors, dependents, and civilian employees on program goals and how, as individuals they can help meet the goals. Energy awareness is everyone's responsibility.

(3) Energy Personnel Staffing and Training. The proper staffing and training of personnel will enable MCAS Yuma to achieve the statutory and regulatory requirements established. Training will be performed at every level from Energy Management Staff to Building Energy Monitors (BEM). This effort will ensure continuation of an effective energy program.

(a) Station Energy Manager. Is located in the Facilities Management Department building 888, extension 2734. Primary responsibilities are to function as the single point of contact for all energy management matters and the continued aggressive support of the Station's Energy Management Program. The Energy

Manager is authorized to verbally counsel personnel and/or to issue Utilities Conservation Violation Reports (UCVR) (enclosure 3) to Departments and Commands responsible for energy waste. Such reports require a written reply to the Energy Manager within 10 working days justifying unusual consumption or incidents outlining corrective steps taken to prevent further incidents.

(b) Station Energy Monitor. Is located in the Facilities Management Department building 888, extension 5255. Primary responsibilities are to coordinate efforts with all Building Energy Monitors, perform visual inspections for energy conservation violations, and manage the energy awareness campaign at MCAS Yuma. The Station Energy Monitor is authorized to verbally counsel personnel and/or to issue Utilities Conservation Violation Reports (UCVR) (enclosure 3) to Departments and Commands responsible for energy waste. Such reports require a written reply to the Energy Manager within 10 working days justifying unusual consumption or incidents outlining corrective steps taken to prevent further incidents.

(c) Building Energy Monitors (BEM). Shall be provided by each Command or Department. BEM's function as the primary point of contact on energy related matters for each facility under their jurisdiction. They work closely with the Station Energy Monitor to ensure energy discrepancies are identified and corrected. BEM's will receive training on the performance of their duties from the Station Energy Monitor.

(d) Awards Programs. MCAS Yuma participates annually for individual energy awards. The Secretary of the Navy Energy Award (SECNAV) and the Federal Energy Efficiency Award (FEEA) are prestigious awards presented to those activities which recognizes outstanding energy program accomplishments. MCAS Yuma has won three SECNAV awards and two FEEA awards since 1987. Commands and organizations that implement energy conservation strategies on their own should contact the MCAS Energy Office. Conservation benefits the entire Station and their idea may be applicable to other units.

(4) Total Station Participation. All Departments and Commands will focus on energy conservation awareness programs. Public outreach, active general awareness efforts, and combined participation translates into a total user program. Through these efforts, all

users are made aware that the energy reduction requirement is a national concern mandated by Congress and that MCAS Yuma personnel are responsible for achieving the reduction goal. The following items are applicable to all Departments and Commands.

(a) Ensure their personnel are aware of this Order and the need for proper energy management.

(b) Appoint Building Energy Monitors (BEM) for each facility to coordinate their energy management efforts. Submit names of appointees and their alternates names in writing or by electronic mail to the Station Energy Monitor, RONALD J DURFEY@FACMAN, at the beginning of each calendar year or upon change of appointee.

(c) Ensure compliance with enclosure 1.

(d) Urge personnel to submit energy conservation beneficial suggestions. All beneficial suggestions designated as energy conserving will be evaluated by the Energy Manager.

c. **Method.** The primary objective is to optimize the efficiency of existing energy consuming systems to ensure they operate at the lowest life cycle cost consistent with meeting environmental requirements. MCAS Yuma will focus on implementing process improvement in operations and maintenance. This will occur by becoming more efficient through improved preventive and planned maintenance programs, by implementing fuel and load management strategies, and through greater use of metering and control technologies.

(1) Preventive & Planned Maintenance. Maintenance decisions will be based on life-cycle cost analyses consistent with environmental requirements. Well maintained systems operate more effectively, interruptions of the utilities system operations are minimized ensuring mission capability and customer satisfaction. Regular inspections identify requirements and improvement opportunities early, and facilitate planning for future equipment and system repairs, replacements and retrofits.

(2) Efficiency Improvements. Design staff will specify cost effective energy efficient equipment taking advantage of technological advancements. Supply and procurement personnel will also be involved

by purchasing and maintaining replacement stocks of equipment and components that maximize energy efficiency based on life cycle cost effectiveness.

(3) Load Management. Load management generally refers to actions to reduce daily demand peaks for purchased electricity and to shift demand to off peak hours. Load management is an important component of Demand Side Management. Satisfying peak demand usually requires utilities to bring more expensive electric generating units on-line. Peak rates for electricity are considerably higher than the rates charged off-peak hours when the demand can be satisfied by more economical baseload generating plants. Reducing all unnecessary electrical loads to off peak hours will produce the greatest energy and cost savings at MCAS Yuma.

(4) Accurate Measurements. Meters and other control technology will be installed to provide more accurate determination of consumption, reduce waste, and contribute to more effective cost control.

d. **Fund Sources**. Investment in studies that identify future requirements and opportunities for improvements are a cornerstone of the long term plan. MCAS Yuma will actively seek to identify life-cycle cost effective projects and participate in demonstration programs when cost effective and compatible with installation mission. The following funding sources are available:

(1) Energy Conservation Investment Program (ECIP). This is a DOD managed MILCON program. The objective of this program is to fund retrofit of existing buildings or energy systems to minimize energy loss while implementing the latest technologies. Projects must exceed $300,000, have a simple payback of 10 years or less, and have a savings to investment ratio of 1.0.

(2) Federal Energy Management Program (FEMP). This centrally managed program is intended to expedite implementation of the Energy Policy Act of 1992. Funds are provided to promote energy and water use efficiency in DOD facilities. FEMP will fund project design, construction, identification studies and program support efforts such as training and awareness.

(3) Energy Cost Avoidance Program (ECAP). Is a Navy sponsored and managed program. Program supports minor construction ($50K-$300K) and repair projects ($50K-$500K) and equipment purchases with a simple payback of four years or less.

(4) Energy/Utilities Improvement Program (R-2). This program is a centrally managed program at the Headquarters level. This resource is utilized by the Marine Corps installations for construc- tion projects costing $300,000 or less. Projects are submitted, validated, and prioritized by LFF.

(5) Local O&M Funds. Used for projects within the local commands approval authority. Types of projects include lighting improvements, and flow restrictors on faucets.

(6) Energy/Utilities Improvement Programs (P-1). This is a Headquarters centrally managed program. Program supports other engineering studies and development of special initiatives.

(7) Other Sources. Other sources of funds for energy conserv- ation and efficiency improvements efforts in facilities include tech- nology demonstrations, public/private venture agreements, and utility company rebates.

e. **Energy Office**

(1) The MCAS Yuma Energy Office is located in the Facilities Management Department Bldg. 888.

(2) Energy violations shall be reported to the Station Energy Monitor extension 5255. The Station Energy Monitor will follow up and take action on all calls.

(3) Energy awareness materials such as literature, pamphlets, posters, etc. are available from the Station Energy Monitor.

(4) Question regarding energy conservation can be answered by contacting the MCAS Energy Manager at extension 2734 or the Station Energy Monitor at extension 5255.

A. M. TORRANCE
By direction

Distribution: B

UTILITIES CONSERVATION PLAN

1. **General.** All personnel in a position of authority shall indoctrinate military, dependent, and civilian personnel in the need for eliminating utility waste. Government personnel whose duties require them to perform inspections on Station and Family Housing such as the Fire Inspectors, Facilities Management Department (FMD) personnel, and Provost Marshall Office (PMO) patrols will observe conditions and report energy waste to the Station Energy Monitor, extension 5255.

2. **Air Conditioning and Heating.** To minimize energy consumption, the following schedules for air conditioning and heating seasons are established. The installation of electrically powered air conditioning equipment into previously non-conditioned spaces are prohibited by OPNAVINST 4100.5C. In exceptional cases, the Station Commanding Officer may determine that installation of air conditioning is essential.

a. Air conditioning and heating equipment changeovers will be as directed by the Facilities Management Officer (FMO). In most cases, air conditioning and heating systems at MCAS Yuma are not equipped to provide A/C and heat at the same time. The customer must allow ample time to provide the proper maintenance of this equipment.

(1) As a general guide, air conditioning will be turned on after 15 April when the outside air temperatures exceed 85 degrees Fahrenheit for three consecutive days. Outside air temperatures will be provided from the Station Weather Office. Special requests to have air conditioning turned on early must be submitted to the Energy Manager, Facilities Management Department, by electronic mail (RONALD J DURFEY@FACMAN)or by memo justifying the requirement.

(2) Air Conditioning will be secured after 15 October unless unseasonably warm weather persists or by special request by the customer for extension of service.

(3) The thermostat setpoint for air conditioning is 78 degrees Fahrenheit in all facilities including Family Housing.

(4) Heating will be turned on after 1 November when the daily low temperature is less than 55 degrees Fahrenheit for two consecutive

days. Heating will be turned off no later than 15 March unless unseasonably cold weather persists. Special requests for heat turn on/off must be submitted in writing or by electronic mail to the Energy Manager, Facilities Management Department.

(5) Heating temperature setpoints are 68 degrees Fahrenheit in all facilities and 72 degrees in Family Housing.

(6) All thermostats installed shall meet the specification in MCO P11000.9B. Thermostats shall not be tampered with in any way. Secure the heat and or air conditioning when spaces are not occupied if feasible.

(7) Report any and all problems to the Facilities Management Customer Service Desk, extension 2222. Any request for exception to the A/C and heating policy must be in writing to the Energy Manager for approval or disapproval.

(8) Additional Charges: Switching A/C and heat back and forth is both time consuming and costly. It poses a problem for the coordination of maintenance work and expends costly labor dollars in overtime. **Reimbursable customers requesting turn on or turn off of services over the initial service connect/disconnect will be charged Service Call labor at the local prevailing rate.**

b. Year Round A/C. The following facilities are authorized air conditioning year round:

(1) Contract Maintained Facilities:

Bldg 964 Computer Room
Bldg 1030 Station Telephone
Bldg 3224 Telephone Center

(2) Government Maintained Facilities:

Bldg 99
Bldg 123
Bldg 136
Bldg 144 Small unit equipment only
Bldg 150

Bldg 151 South Side Only
Bldg 153 Weather Side Only
Bldg 200
Bldg 215
Bldg 328 West End (Upstairs and Downstairs)
Bldg 406
Bldg 408
Bldg 500 Crypto Room
Bldg 508
Bldg 1520
Bldg PAR Site
Bldg SAR Site
Bldg TACAN

c. Portable Space Heaters. The use of portable electric space heaters, hot plates, personal refrigerators, and other unauthorized devices shall be eliminated. In certain instances, portable space heaters are required on a temporary basis when heating systems fail. Requests for these devices must be submitted in writing to the Facilities Management Officer (FMO) via Station Fire Department for approval/disapproval. Request shall include justification for use of space heaters.

3. **Lighting**

a. Interior Lighting. Use the minimum amount of lamp wattage necessary for proper lighting. Proper wattage will reduce the risk of fire and increase energy efficiency.

(1) Incandescent lights are the most abused lamp at MCAS Yuma and the least efficient. The goal of MCAS Yuma is to eliminate the use of incandescent lamps in their entirety.

(2) Artificial lighting will be restricted as follows. This is not intended to restrict lighting required for personnel safety. Exceptions to this policy will be handled on a case by case basis.

Work Stations	50 foot candles (Maximum)
Work Areas	30 foot candles (Maximum)
Non Work Areas	10 foot candles (Maximum)

(3) Turn off all unnecessary lights when not in use.

b. Exterior Lighting. Turn on only essential security lights at sunset, and turn off lights at sunrise.

(1) Malfunctioning security lights (photocell/timers) shall be reported to the Facilities Management Customer Service Desk, ext. 2222.

(2) Athletic field lights should only be turned on when ready to play and secured immediately following completion of play. MWR is responsible for securing athletic field lights and tennis courts lights.

(3) Ensure all outside lights are secured during daylight hours. Unattended washrack lights left on during nighttime hours shall be reported to the OOD and secured.

4. **Electrical Demands**. Defer energizing large electrical loads to "off peak" (non-working) hours during the summer where feasible. Energize electrical equipment in increments to distribute large starting loads throughout the day to reduce peak demand. During the summer electrical peaks normally occur from 1200-1800 hours Monday through Friday.

5. **Building Energy Monitor Checklist**. The Building Energy Monitor's primary point of contact to report energy discrepancies or violations to is the Station Energy Monitor. Station Energy Monitor is located in the Facilities Management Department building 888, extension 5255. The following checklist is devised to help the individual Building Energy Monitors in the performance of their duties. BEM's duties include inspecting their facility and areas for energy violations and discrepancies. Energy discrepancies found during inspection shall be turned into the Facilities Management Customer Service Desk at extension 2222 for correction, by means of a Service Call or Work Request. All discrepancies found shall be maintained in an Energy Discrepancy Report and kept on file for review by the Station Energy Office.

Building Energy Manager Checklist

Monitor's Name: _____

Building: _____

Date/Time: _____

	Yes	No
1. Lights left on in unoccupied spaces.	( )	( )
2. Exterior lights on during daylight hours.	( )	( )
3. Lighting levels to high.	( )	( )
4. Lighting levels to low.	( )	( )
5. Fixtures clean.	( )	( )
6. Burnt out lamps or flickering lamps.	( )	( )
7. Incandescents lamps in use.	( )	( )
8. Exit signs work properly.	( )	( )
9. Task lighting <u>on</u> when not necessary.	( )	( )
10. Are air conditioning vents obstructed.	( )	( )
11. Exterior doors/windows left open when A/C or heat is on.	( )	( )
12. Thermostat setting correct 78 degrees cooling 68 degrees F. winter.	( )	( )
13. Weather-stripping or caulking installed.	( )	( )
14. Windows broken or cracked.	( )	( )

Enclosure (2)

15. If reflective screens are installed on your facility, is it properly secured? ( ) ( )

Notes/Comments: _____

_____

_____

_____

ENERGY CONSERVATION SUGGESTIONS FOR FAMILY HOUSING

The high cost of utilities is a reality at MCAS Yuma. Most of the suggestions provided are easy to do requiring no special tools or skills. The most difficult part of conservation are getting started and breaking old, wasteful habits. By conserving energy and water we can make our installation a better place to work and live.

1. **Save on Air Conditioning and Heating**

a. Look for cracks around windows and door frames, areas where caulking and weather-stripping should be installed and report it to the Housing Office. Hot or cold air enters your house from these areas and cause your A/C or heating system to work harder.

b. Close draperies and shades when the sun is shining through the glass to help cut down on solar heating. The more heat let into the house the harder the air conditioning system has to work to keep it cool.

c. Check your air conditioning filters and clean them regularly. Restricted air flow causes the air conditioning system to work harder and not cool efficiently.

d. Turn off the A/C unit when your quarters are going to be vacant for extended periods of time.

e. Set the thermostat to the appropriate temperature and leave it alone. Setting the setpoint to a lower temperature will not cool off the building any faster.

f. Use your exhaust fans sparingly to avoid exhausting warm or cold air outside.

2. **Save on Lighting**

a. Turn off lights whenever you leave the room, including fluorescent lamps.

b. Use lamps for close work instead of overhead lights.

c. Use the right light to fit the task.

d. One large bulb may provide enough light as opposed to numerous small lights.

e. An incandescent light is the cheapest to buy but the most expensive to own, due to its low efficiency and short life.

f. Use fluorescent lights wherever you can. They use less energy.

g. Dust your lightbulbs regularly. Dirty bulbs reduce the amount of light emitted.

h. **Don't use larger wattage bulbs than allowed by the fixture!** It is a fire hazard and shortens the life of the bulb.

5. **Save in the Kitchen**

a. Don't keep your refrigerator or freezer too cold.

b. Make sure your refrigerator door seals are air tight. Improper seals allow cold air to escape.

c. Refrigerators work best when the door is closed. Never hold the door open for extended period of time.

d. Clean the coils on the bottom and the back to increase the efficiency of the motor. The more dirt and debris that accumulates the less the efficient the unit.

e. Cook by microwave. It saves energy, keeps the house cool, and minimizes cleanup.

f. Clean the heat reflector below the stove heating element to reflect the heat better.

g. Use the oven to cook an entire meal at one time or use energy efficient appliances like crock-pots.

h. Cook out on your patio to keep your house cool. Grill instead of using the oven whenever possible. Partial cooking in the microwave reduces grilling time.

i. Turn off an appliance if you are not using it. Buy energy efficient appliances. Check the label. Most energy efficient appliances are marked from the manufacturer.

j. Run your dishwasher with a full load. Skip the drying cycle. Open the door to let dishes air dry.

7. **Save in the Laundry**

a. Use proper load control selection when doing laundry. Wash and dry full loads.

b. Use the amount of detergent according to the box directions. More won't get your clothes cleaner. If possible, let your normal wash load soak for 30 minutes before agitating to lift out more soil. Use a suds saver if you have one.

c. Wash in cold or warm water and rinse in cold.

d. Pre-soak or use a soak cycle when washing heavily soiled clothes.

e. When drying clothes don't mix heavy and light articles in the same load.

f. Dry several loads in a row to use the heat remaining in the dryer from the previous load.

g. Cleaning the lint filter after each cycle helps keep the clothes dryer running more efficiently and reduces lint buildup in clothing.

h. Hang clothes out to dry on clothes line whenever possible.

9. **Save Water**

a. Refrain from washing vehicles, and lawn watering, during peak

electrical period of the day during the months of June through October. Water in the morning or evening. Water from sprinklers evaporates 4-8 times faster in the heat of the day.

b. Don't overwater. Apply water gradually to avoid runoff. Asphalt and concrete won't grow.

c. Report leaking spigots, pipes, etc. to the Housing Customer Service Desk, extension 2825.

d. Keep shower time to minimum. Do not allow water to run continuously when washing dishes, hands, shaving, or brushing teeth.

e. Use a broom rather than the hose to clean off walkways, patios and other outdoor areas. Water also deteriorates the concrete over period of time.

10. **Save on your Vehicles**

a. Under inflated tires can lower gas mileage as much as 20 percent.

b. Change the oil and tune your automobile at least as often as the vehicle's manual recommends.

c. Most vehicles are designed to get their best mileage between 35 and 55 mph. For every mile exceeding 55mph, you lose as much as 1/2 mile per gallon.

d. Accelerating from a stop to your cruising speed uses three times more gas than just maintaining that speed, so try to drive at a steady rate. Avoid sudden stops by being aware of traffic.

UTILITIES CONSERVATION VIOLATION REPORT

Date: _____

From: Energy Manager, MCAS Yuma,
To: Officer in Charge, _____(Activity/Unit)

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Locations and Findings:

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_____

_____

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Recommendations or Remarks:

_____

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Action Justification Required: Yes ( ) No ( )

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Date: _____
From: Officer in Charge, _____(Activity/Unit)
To: Energy Manager, MCAS Yuma

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Action/justification:

_____

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_____

_____

Signature: **Title/Rank:**

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Return this Utilities Conservation Violation Report with actions/justification to the Facilities Management Department, Building 888, within 10 working days of the date of issue.

ENERGY DISCREPANCY REPORT

1. **Date of Occurrence:** _____

2. **Location:** _____

_____

3. **Description:** _____

_____

_____

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_____

_____

_____

4. **Action Taken:** _____

_____

_____

_____

_____
Building Energy Monitor

_____
Unit and Bldg.

_____
Name/Rank Phone #